

Waste Management Plan

Consultation Response by Feedback Global



Feedback welcome that the government is committed to zero food waste to landfill by 2030 and mandatory separate food waste collection. The government is also “committed to increasing the energy from waste produced through AD”. The summary of evidence presented here shows that Anaerobic Digestion (AD) is often a suboptimal use of the land and resources embodied in food waste, except as a last-resort waste management option, and that food waste prevention and diversion to animal feed yield far greater environmental benefits. Feedback therefore recommends increased taxes on landfill and incineration of waste feedstocks so that AD becomes attractive as a last resort, and that the government’s target of zero waste to landfill is complemented by a target to send zero food waste to incineration by 2030. The revenue raised from these taxes on landfill and incineration should be used to invest in food waste measurement and prevention (including at primary production level), and using the land spared by this for afforestation and plant-based protein production. Feedback recommends that the government introduce ambitious regulation to achieve faster food waste prevention that is currently planned under voluntary food waste agreements. This regulation should include mandatory food waste reporting for all large food businesses, the tax penalties mentioned above, and legally binding national targets for a 50% reduction in all UK food waste from farm to fork by 2030, against 2015 baselines.

Please note that this consultation response draws heavily on Feedback’s recent report *Bad Energy* (Feedback, 2020) and the Life Cycle Assessment on anaerobic digestion which this is based on, recently published by Feedback and the University of Bangor (Styles *et al.*, 2020a). Feedback are available to present these findings to Defra.

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Q8. Will the draft Waste Management Plan for England – when combined with the location specific guidance in waste planning policy - meet the requirements of Schedule 1 of the Waste (England and Wales) Regulations 2011?

No

Evidence to support Feedback’s view:

Feedback do not believe that WMPE meets the requirements of Schedule 1 of the Waste (England and Wales) Regulations 2011, which clearly commits to the following: “2.—(1) To apply the following waste hierarchy as a priority order in waste prevention and management policy— (a) prevention; (b) preparing for re-use; (c) recycling; (d) other recovery (for example energy recovery); (e) disposal”. It also states that the appropriate authority must ensure that it “encourages the options that deliver the best overall environmental outcome”. However, concerning food waste, the WMPE sets out only a target to divert food from landfill (e) to Anaerobic Digestion (c) – focusing only on the lowest stages of the hierarchy. The government’s statutory guidance on the Food and drink waste hierarchy for dealing with surplus and waste clearly states that the order of priority should be: 1. Prevent surplus and waste in your business, 2. Redistribute surplus food, 3. Make animal feed from former food, 4. Recycle your food waste – anaerobic digestion” (Defra, 2018).

Thus, whilst Feedback welcomes the government's commitment to zero food waste to landfill by 2030, Feedback recommends that WMPE urgently needs to set out how it will ensure that food waste prevention and sending food waste to animal feed are prioritised over AD.

If the government wants to incentivise the use of AD as a food waste management option where food waste prevention or re-use as animal feed are not possible, Feedback recommends that the best approach is to substantially **increase tax penalties on lower stages in the food use hierarchy such as incineration and landfill, rather than offering subsidies to AD**. Increasing taxes on landfill and incineration is also likely to increase the gate fees paid for collection of waste feedstocks for AD, making AD plants more financially viable without the need for subsidies. It would also be a popular policy - the UK's Climate Assembly's final report noted that 72% of participants supported taxes and incentives to reduce food waste (Climate Assembly UK, 2020). In contrast, subsidising AD risks perverse incentives diverting food waste down the food use hierarchy from prevention and use as animal feed. Waitrose admitted to the House of Lords enquiry into food waste that **"there is a clear temptation, on economic grounds, to prioritise energy recovery over redistribution"** (House of Lords EU Committee, 2013, p. 46). The House of Lords report thus recommended that incentives for anaerobic digestion should not distort the food waste hierarchy (House of Lords EU Committee, 2013, p. 48). **Feedback therefore strongly recommends increasing landfill tax substantially, and the introduction of a tax on incineration on a par with an enhanced landfill tax**. Incineration releases significant amount of greenhouse gases, and 'wet' food waste in incinerators rely on plastics to burn effectively, further increasing the greenhouse gas burden (United Kingdom Without Incineration Network, 2019). In early 2020, a broad cross-party group of MPs called for an incineration tax to be introduced (Benson, 2020). Responses to a government consultation in 2018 showed "overwhelming support" from the public for measures including using taxes to encourage "further recycling as opposed to incineration" (HM Treasury, 2018). Prof Sir Iain Boyd, former Chief Scientific Advisor to DEFRA, said his oral evidence to the EFRA Committee in 2018: 'If there is one way of quickly extinguishing the value in a material, it is to stick it in an incinerator and burn it. It may give you energy out at the end of the day, but some of those materials, even if they are plastics, with a little ingenuity, can be given more positive value. One thing that worries me is that we are taking these materials, we are putting them in incinerators, we are losing them forever and we are creating carbon dioxide out of them, which is not a great thing...I think that incineration is not a good direction to go in.' (EFRA Committee, 2018). In the medium and longer terms, **Feedback recommends a phase out of incineration by 2030**: incinerating materials, including food waste, precludes transition to the circular economy. For food waste, using unavoidable inedible food waste as animal feed or sending it to composting or AD (to produce compost or digestate) avoids leakages out of agricultural and food production, enabling a truly circular economy, or 'closing the loop', potentially displacing the use of petro-fertilisers. The scale of this opportunity has not as yet been identified.

Feedback strongly supports the government's commitment to introduce mandatory separate food waste collection, introduced from 2023, and hope this will help facilitate a commitment to send zero food waste to incineration as well as landfill.

Feedback recommends that the revenue raised from an increase in landfill and incineration tax is used to **significantly increase funding for measurement and prevention of food waste (including at primary production level) – with a focus on designing food waste out of the system in the first place, rather than redistribution to charities**. This money would be far more efficiently spent on prevention than on AD, yielding considerably higher environmental benefits. In 2011, **Defra estimated that food waste prevention saved on average 8 times more emissions than sending food**

waste to AD (Defra and DECC, 2011, p. 10). Other studies have found that prevention of food waste was found to save 5 to 25 times the emissions compared with sending food to AD (Moult *et al.*, 2018). **A Life Cycle Assessment commissioned by Feedback and conducted by researchers at Bangor University found that preventing food waste results in direct emissions savings approximately 9 times higher than sending it to AD – and that if the grassland used to grow this food is instead afforested, this results in emissions mitigation levels over 40 times higher than sending the same volume of food waste to AD, per tonne food waste (Styles *et al.*, 2020a).**

PREVENTING FOOD WASTE

SAVES 9x MORE EMISSIONS

THAN SENDING IT TO AD



PREVENTING FOOD WASTE & PLANTING TREES ON THE GRASSLAND SPARED

SAVES 40x MORE EMISSIONS

THAN SENDING IT TO AD



Therefore, a significantly more cost-effective use of government revenue would be to increase funding for food waste prevention and afforestation, funded through revenue raised from increased taxes on incineration and landfill.

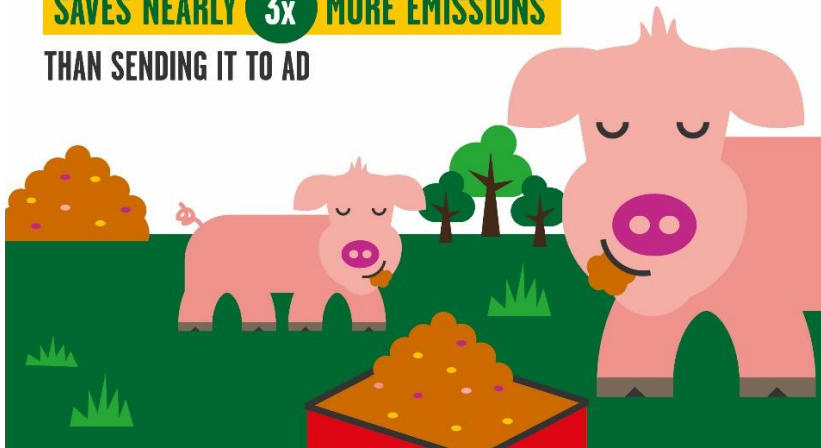
Even for food waste which cannot be prevented, Feedback strongly disputes the consultation claim that “AD represents the waste treatment route with the best environmental outcome for food waste that cannot be prevented or redistributed” (p18). This **contradicts the government’s own statutory guidance on the Food and drink waste hierarchy for dealing with surplus and waste, which clearly states that making “animal feed from former food” should be prioritised over sending food waste to AD** from an environmental perspective (Defra, 2018). This is backed up by the evidence. For instance, Feedback’s LCA found that in the current technology context, **sending food waste to animal feed saves nearly 3 times the emissions as sending it to AD – in addition to sparing extra**

cropland for food production (Styles *et al.*, 2020a). If cropland previously used to grow animal feed is instead used to plant trees, sending food waste to animal feed saves nearly 5 times the emissions as sending it to AD (Styles *et al.*, 2020a) – it is worth bearing in mind the higher emissions mitigation figure as sometimes animal feed imported into the UK is in direct competition with forests.

USING FOOD WASTE AS ANIMAL FEED

SAVES NEARLY 3x MORE EMISSIONS

THAN SENDING IT TO AD

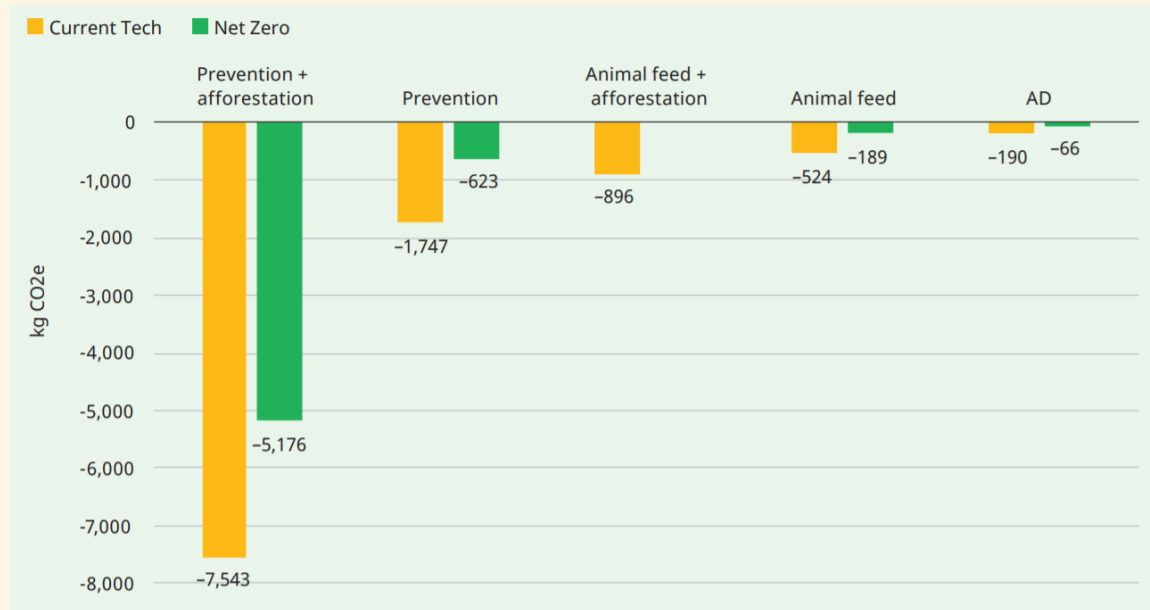


Salemdeeb *et al.* (2017) also found that using heat-treated food waste in animal feed (wet-feed) was better on 13 out of 14 environmental indicators such as global warming potential and water pollution than sending it to AD.

Feedback's LCA concludes that even in the most optimistic scenario where 87% manures and slurries are used for AD alongside significant volumes of food waste and crops, AD mitigates up to only 14.9 Mt CO₂ eq per year directly – equivalent to around 3.3% of the UK's 2018 emissions, with the minority of these emissions savings coming from food waste. This is significantly lower than the ADBA's estimation that AD has potential to mitigate UK emissions by up to 6% (Whitlock, 2019). It must therefore be ensured that AD is used as last resort and does not detract from food waste prevention.

The effectiveness of AD as a means to mitigate the emissions of food waste also declines significantly over time – from -190 kg CO₂eq per tonne of food waste in the current technology context to -66 kg CO₂eq per tonne of food waste in a net zero context (Feedback, 2020, p. 48). This is consistently far lower emissions mitigation than for prevention and diversion to animal feed:

Figure 9: Emissions savings by food waste destination in current technology and net zero contexts (per tonne of food waste)



A Life Cycle Assessment recently published by Feedback and the University of Bangor finds that **reducing UK food waste by 50% from farm to fork through ambitious regulation (with afforestation on the roughly 3 million hectares of grassland spared by this) would save approximately 51 million tonnes CO₂eq – about 11% of the UK’s current total GHG emissions¹**. In addition, halving UK food waste **would save approximately 0.8 million hectares of cropland which could produce enough food to feed 28% of the UK population** with all of the calories they need all year round in potatoes and peas. These are huge potential emissions savings, which have significant potential to contribute to the UK’s international climate change commitments, as well as food security post-Brexit.

¹ In this scenario (Circular/AD Min), UK food waste is assumed to be reduced by 50%, against a 2015 baseline and as a percentage of edible and inedible food waste, and some food surplus currently going to animal feed is assumed to be prevented – with remaining food waste going to AD. It was also assumed that the law was reformed in this scenario to allow some food surplus from catering and containing meat to be sent to non-ruminant animal feed after being safely processed.

HALVING UK FOOD WASTE THROUGH AMBITIOUS REGULATION



(The UK's current voluntary food waste targets aim to halve edible food waste only, using a baseline of 2007 onwards and excluding primary production from concrete targets. An ambitious regulatory target aims for 50% reduction of all food waste (in practice, a greater than 50% reduction of edible food waste) from farm to fork against 2015 baselines.)

However, the UK's current voluntary agreements on food waste deliver significantly lower benefits – resulting in 63% lower emissions mitigation and a 43% lower yield of calories and protein than **this scenario** (Feedback, 2020). It should be noted that some of these emissions savings and spared land would occur overseas, as a result of preventing wastage of imported food.

UK'S CURRENT VOLUNTARY FOOD WASTE REDUCTION TARGETS



The UK government's current framework for encouraging food waste prevention is voluntary commitments such as Courtauld 2025 and the Food Waste Reduction Roadmap, administered by WRAP. These promise to deliver a 50% reduction in the UK's food waste by 2030 – and WRAP have claimed that the UK has already achieved a 27% reduction (WRAP, 2020b). However, a closer

examination of the Roadmap detail reveals it actually aims to reduce post-farm-gate food waste from 10.2 million tonnes in 2015 to 7.7 million tonnes in 2030 (WRAP, 2018, 2020b) - 15 years for a 24% decrease in volume or 30% decrease per capita². This target can be presented as a 50% reduction through a combination of techniques, which cumulatively water down the target's ambition:

- Using a baseline from 2007 onwards, rather than 2015 onwards, meaning any food waste reduction between 2007-15 already counts towards the 50% reduction;
- Measure food waste per capita, and use a 2007 baseline for the UK population – meaning that the extra difference between population in 2007-15 makes the target easier to achieve;
- Only achieve a 50% reduction in edible food waste – rather than a 50% reduction in inedible and edible food waste (which would in practice require a more than 50% decrease in edible food waste).
- Exclusion of primary production food waste, due to lack of government funding and industry action to generate robust baseline data.

An example of the extent to which this affects the apparent ambition of the UK's targets is that Courtauld 2025 was originally presented as achieving a 20% reduction in UK food waste by 2025, when launched in 2016 (WRAP, 2016). However, under WRAP's new methodology, Courtauld 2025 achieves a 40% reduction in food waste (WRAP, 2020b, p. 11), despite there being no changes to the tonnage of food waste the agreement aims to reduce by 2025. The UK should not lower the ambition of its targets to fit its current rate of progress – it should raise its ambition.

To yield the considerable emissions savings and food security benefits modelled in the Life Cycle Assessment cited above, it will be necessary for the UK to **commit to halve all UK food waste (edible and inedible) by 50% from farm to fork by 2030, against 2030 baselines**. This would require a reduction in UK food waste from an estimated 11.8 million tonnes in 2015 to roughly 5.9 million tonnes in 2030³, for all sectors including primary production. The UK is currently on course to reduce post-farmgate food waste by only 2.5 million tonnes between 2015 and 2030, with almost all of these savings coming from consumer food waste (WRAP, 2020b). The targets Feedback recommends will require a rate of food waste reduction higher than has been historically achieved by voluntary commitments, and therefore will require regulation. WRAP's data shows that UK retail, manufacturing and HaFS, food businesses have only as a total reduced their food waste from 3.11 million tonnes in 2011 to 2.88 million tonnes in 2018, a 7% decrease over 7 years or roughly **1% decrease per year**. Furthermore, this currently excludes primary production food waste, which according to WRAP's estimates may be as high as 3.5 million tonnes, and for which no known sector-wide reductions have been measured (WRAP, 2019). It also excludes food surplus, much of which is human edible food which is used considerably below its potential as animal feed – for instance, WRAP estimate that about 2 million tonnes of food surplus occurs on UK farms (WRAP, 2019, p. 6).

To facilitate these ambitious food waste targets, Feedback recommend that the UK government introduce a number of regulatory measures:

² Population statistics sourced from:

<https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates>

³ This is modelled in the LCA conducted by researchers at Bangor University, commissioned by Feedback – see the paper for a more detailed breakdown of food waste destinations in the 'Circular' scenario (Styles *et al.*, 2020b Table 2)

1) Introduce legally binding targets for the UK to reduce all UK food waste (edible and inedible) by 50% from farm to fork by 2030, against 2015 baselines, and integrate these targets into the UK's NDC

In 2017, the House of Commons environment select committee recommended an ambitious “national food waste target” be formally adopted by the UK (House of Commons EFRA Committee, 2017, p. 3). The government’s Waste Strategy also committed to “Consult on legal powers to introduce mandatory targets for food waste prevention”, “subject to progress made by businesses to reduce food waste” (HM Government, 2018, p. 103). This consultation should be urgently delivered, because WRAP’s data shows that UK retail, manufacturing and HaFS food waste has reduced by only 1% decrease per year between 2011-18, and the industry plans to reduce it by only 1.5% per year by 2030 – when coupled with unknown progress on primary production food waste, this demonstrates a completely unacceptable level of progress. Feedback strongly recommend the introduction of legally binding ambitious targets to halve UK food waste.

These targets should be integrated into the UK’s 2020 Nationally Determined Contributions (NDCs). A year before the delayed COP 26 negotiations take place in Glasgow in November 2021, the UK faces a unique opportunity. Food has been largely neglected in climate policy, despite the massive potential of food systems change for climate mitigation. In developing its enhanced NDC to the Paris Agreement, and in setting out its path to Net Zero national emissions, the UK must incorporate bold action on food waste into its climate arsenal. The UK needs a national, binding target to halve food waste across all levels of the supply chain, integrated into government policy via a cross-departmental strategy, and backed by legislation. Not only will this help set the UK on a course for climate action commensurate with the scale of the global challenge we face, it will also demonstrate to other parties at the UNFCCC conference that action on food systems should be firmly on the table when designing their own climate policy.

2) Introduce mandatory food waste reporting for all large food businesses from farm to fork

Feedback recommends that the government urgently implements regulation to require mandatory measurement and public reporting of food waste data by food businesses, as proposed in the Resources and Waste Strategy, as this is an area where voluntary initiatives have clearly failed to achieve the urgent progress required. Businesses who already have food waste data available and have to date been reporting privately to WRAP, or not reporting at all, should be required to publicly report this data by the end of 2021. Businesses who have yet to generate food waste data, should be required to measure their food waste in 2021, and report this publicly by no later than 2022.

Mandatory food waste reporting by businesses will create a level of public accountability which may help provide an incentive for businesses to reduce their food waste, and that of their suppliers. Equally importantly, it will provide data to allow a clear view of food waste occurring nationally in each sector. No robust data has been collected on food waste occurring in the HaFS sector for many years, though 2018 estimates from WRAP suggest that it had increased by 7% between 2015-18 (WRAP, 2020a).

It is vital that large food businesses in primary production are included in this mandatory food waste measurement and public reporting. Currently, due to lack of robust data to form a baseline, primary production food waste is locked out of the UK’s national food waste reduction targets. Some measurable action does occur at individual business level, but currently there is very low participation amongst primary producers in WRAP’s Food Waste Reduction Roadmap. WRAP’s estimates suggest potentially more food may be wasted at primary production than in UK retail,

manufacturing and HaFS sectors combined. In addition, approximately 2 million tonnes of food surplus occurs on farms – much of this food edible to humans which is instead fed to livestock as animal feed, and thus used significantly below its potential. A survey of UK farmers by Feedback found that respondents were experiencing waste levels on average of 10-16% of their crop (Bowman, 2018). Making it mandatory for large primary producers to measure and publicly report their food waste could help the UK become the first country in the world to generate accurate baseline data for primary production food waste.

3) Mandatory food waste reduction targets for large food businesses

Feedback recommends that it be compulsory for all large food businesses to commit to food waste reduction activities, with financial penalties for inaction. The UK's voluntary commitments have been marred by low participation, introducing the risk of non-participants and free riders slowing general progress and putting a downward pressure on the ambition on national targets because of the need to attract participation. Making it compulsory for food businesses to adopt food waste targets incentivises participation in voluntary agreements (to enable businesses to meet their targets), and introducing penalties for inaction would prevent free riders and level the playing field for all businesses.

4) Put in place the regulatory, fiscal and enforcement regime to operationalise the food use hierarchy as per the 'polluter pays' principle

Feedback recommends that in line with the above recommendations, the UK government raise taxes on landfill and incineration immediately, and aim to phase both out by 2030. Feedback recommend that the revenue raised is used to fund food waste measurement and prevention as its highest priority.

5) Reform the law to enable safely treated and tightly regulated "eco-feed" made from surplus food to be fed to omnivorous non-ruminants like pigs and chickens.

Currently there are legal barriers to the UK feeding certain types of food waste and surplus to non-ruminant livestock – namely, food which might contain traces of meat, or from the catering industry⁴. EU-funded research has shown that such food can in principle be safely treated through the right combination of heat-treatment and acidification, so that it can be converted to safe "eco-feed" for pigs and chickens (Luyckx *et al.*, 2019). A test facility is being set up in the Netherlands led by the University of Wageningen and major animal feed companies, with funding from the Dutch government, to finetune the treatment procedures required for feed safety. For more details on the greenhouse gas emissions savings, other benefits, and safety aspects, see the REFRESH policy brief on animal feed (REFRESH, 2019). Just as the EU ban on feeding certain types of food waste to pigs and chickens originated in the UK, the UK can use Brexit as an opportunity to reform these regulations to ensure "eco-feed" is safely produced.

⁴ Feedback do not propose that household food waste be fed to livestock due to additional safety considerations, but here a focus can still be maintained on prevention rather than AD.

Q9. Do you agree with the conclusions of the Environmental Report?

No

Evidence to support Feedback's view:

The Annexes to the Environmental Report state that “The proposed collection of food waste separately from all households could generate over 8Mt of food waste, with AD as the preferred management approach. This has the potential for economic benefits worth up to £280M in renewable energy sales.⁷⁰” (D43). Feedback strongly disagree with this statement, on the grounds that the UK government should be aiming to reduce all UK food waste (edible and inedible) by 50% from farm to fork by 2030, against 2015 baselines. As outlined in the previous question response, Feedback recommend that the government aim for a reduction in UK food waste from an estimated 11.8 million tonnes in 2015 to roughly 5.9 million tonnes in 2030⁵, for all sectors including primary production. This would restrict the maximum food waste available for AD to 5.9 million tonnes. This would be feasible if the regulations mentioned in Q8 are enacted, and the environmental benefits are outlined in our response to the previous question and Feedback's report *Bad Energy* (Feedback, 2020). Feedback strongly recommend that food waste prevention and diversion to animal feed are given policy priority over diverting food waste to AD, in line with the government's food waste hierarchy - however, these are not currently mentioned in the Waste Management Plan.

Q11. Do you agree or disagree with the following statement: ‘There will be no additional burdens for businesses, consumers and local authorities arising directly from the adoption of the Plan’

Disagree

Evidence to support Feedback's view:

The plan may result in extra costs to businesses, consumers and local authorities if considerable public subsidies are issued to AD plants. To avoid this situation, Feedback recommend that AD is incentivised through increased taxes on landfill and incineration, which will raise the gate fees which are paid to AD plants for food waste, making them more financially viable without the need for excessive public subsidies. Any public funding should be focused on speeding the pace of food waste prevention – which has the most significant potential to reduce costs for businesses, consumers and local authorities, due to the avoided costs of food waste disposal or recycling. For instance, the average UK household spends £500 a year on wasted food (WRAP *et al.*, 2020) – this will be reduced by prevention activities, but not by sending this to AD.

⁵ This is modelled in the LCA conducted by researchers at Bangor University, commissioned by Feedback – see the paper for a more detailed breakdown of food waste destinations in the ‘Circular’ scenario (Styles *et al.*, 2020b Table 2).

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